



УНИВЕРЗИТЕТ У БАЊОЈ ЛУЦИ
UNIVERSITY OF BANJA LUKA
ПРИРОДНО-МАТЕМАТИЧКИ ФАКУЛТЕТ
FACULTY OF NATURAL SCIENCES AND MATHEMATICS



CHEMISTRY DEPARTMENT

FIRST CYCLE OF STUDY

Chemistry/Chemistry Education

Course name	Organic Chemistry 2			
Course code	Course status	Semester	Hours of instruction	ECTS
1C16HOS400	required	IV	4+3	8
Teacher(s)	Prof. Milica Balaban PhD			

Prerequisite course(s)	Entry requirements
Organic Chemistry 1	Attended course

Course goals
The aim of the course <i>Organic Chemistry 2</i> is to acquire knowledge about the reactivity of the aromatic ring and different types of compounds containing a carbonyl group, as well as about the appropriate reactions and reaction mechanisms. In addition, students are introduced to the main classes of natural organic compounds, their structure, nomenclature and chemical properties.

Learning outcomes
After passing the exam <i>Organic Chemistry 2</i> , the student describes the characteristic transformations of functional groups and the mechanisms of reactions of polyfunctional compounds. Also, the student classifies natural organic compounds into classes and describes them structurally and stereochemically. The student independently synthesizes simple organic compounds (single-stage synthesis), and depending on the properties, she/he can purify and characterize them.

Course content
Benzene chemistry. Electrophilic aromatic substitution. Chemistry of substituted benzenes. Review of carbonyl compounds. Aldehydes and ketones. Enols, enolates and aldol condensation. Carboxylic acids and nitriles. Carboxylic acid derivatives. Lipids. Amines and their derivatives. Alpha-substitution reactions on the carbonyl group. Condensation reactions of the carbonyl group. Claisen condensation. Heterocyclic compounds. Synthetic polymers. Carbohydrates. Amino acids, peptides, proteins and nucleic acids. <i>Experimental exercises</i> : Properties and synthesis of selected groups of organic compounds. The reactions to functional groups.

Teaching methods
Lectures and laboratory exercises

Books and other learning materials
K K. Peter C.Vollhardt, Neil E. Schore: Organska hemija , Hemijski fakultet, Beograd, 2004. M. Balaban: Osnove eksperimentalne organske hemije , Banja Luka, 2018. B. Rodić Grabovac, M. Balaban, R. Đudić: Praktikum iz organske hemije , Banja Luka, 2014.

Course activities and grading method
The activity refers to the lab exercises, which are a condition for taking the final exam. Tests, two tests per semester. The first from the knowledge of electrophilic aromatic substitution reactions. Others from the knowledge of the mechanisms of reactions of the program of Organic Chemistry 2. The results of the above tests are entered in the final grade only if they exceed 50% of the planned points for a given form of test during the semester.

Activity	10	Tests	30
		Final exam	60

Additional course notes
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Name of the teacher who prepared this form	Milica Balaban
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